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PLANT INDUSTRY

DRY LAND AGRICULTURE INVESTIGATIONS

WEEKLY STATION REPORTS.

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WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE.

REPORT FOR WEEK ENDING APRIL 6, 1918.
(Except where otherwise indicated)

Amarillo, first report of the season:

Spring of this season opens up extremely dry and unpromising. High winds with the usual accompaniment of dust is the prevailing order of weather. Since January 1st to date, our rain gage has registered .47 inch of rainfall as against 1.27 in. given out by the local weather bureau. The difference is unaccounted for and the general condition of dryness goes far toward sustaining the record of the station here. Very little farm or field work is being done. The A plats of CC Wheat and Oats were plowed and harrowed and the lister plats F were leveled yesterday. Winter rye is making a feeble showing of green while the winter wheat on the station and around the country here generally, is making no showing and is likely past the point of recovery even were rain to come in the immediate future. Row crops appear to offer about the only hope, agriculturally speaking, for the Panhandle this season, although if an unusually good Spring season of moisture were to set in soon, there would be a chance for some Spring small grain crops.

Mr. A. B. Cron, who has represented the Forage Crop Office at this station during the past 5 years, left on the 12th to take charge of the station at Chillicothe, Texas, Mr. Edwards having resigned as Superintendent there, to go to farming for himself up in Kansas. Some cooperative work with the Forage Crop Office will probably be continued here by the Cereal Office.

Mr. E. F. Chilcott, Field Assistant for the Southern Great Plains Stations, was here today looking over the situation and making plans for the new line of work in contemplation to begin with this season. An enlargement of the work in contemplation by this office here is also made possible by some 60 or 70 more plats which have been placed at our disposal. Time for making the change, as planned, is opportune, so far as related to uniformity of soil moisture condition of the plats in that they are quite well depleted in moisture supply as a result of the two dry seasons just past.

Amarillo, second report of the season:

Since report of March 16th from this station, weather has continued with moderate to high temperature and wind has been, for the most part, moderate. Skies generally have been clear and except for .81 in. of rain on the 28th and 29th of March there has been no precipitation. The rain just referred to, has temporarily relieved the drouth situation and made possible some early Spring work and seeding, which is now being rushed along in fair shape. The winter wheat plats will likely be re-deeded to spring wheat as the poor stand of the former is only inviting a crop of weeds. It is hoped the new cropping and rotations plans for the Dry Land work here, will be finally decided upon within the next few days. These contemplate reduction of experiments with Spring small grains and enlarging the work with the grain sorghums, winter wheat and

Amarillo, second report of the season, (cont.):

cowpeas. Stress will also be laid upon experiments with 3 year rotations.

Following is a brief summary of climatic conditions that have been obtained here since the first of January:

For January - Max.temp, 72 on the 3rd. Minimum, 12 below on the 10th. On the whole the month was prevailingly cold. Wind averaged an hourly velocity of 7.7 miles. Precipitation all in form of snow totalled .13 inch.

For February - Max.temp, 31 on the 23rd. Minimum, 2 below on the 1st. Like the preceeding month February was abnormally cold. Winds the first half of the month were moderate but the latter half were prevailingly high, the hourly average for the month being 10.2 miles. A rain of .29 in. on the 10th was all the precipitation that came during the month.

For March - Max.temp, 84 on the 8th. Minimum, 21 on the 22nd, being also to date the last frost date of the Spring which makes prospects for fruit this season good so far. Trees have been blossoming profusely the past two or three weeks. Hourly average wind velocity for the month was 8.7 miles, which is about normal for March. Precipitation in form of rain amounted to .36 inch, which is the highest on the station records for this month, except in 1909 when it was 1.08 inch.

Climatic records of this station for the first three months of the present year are being sent in to the Biophysical Office today.

Amarillo:

The past week has been a busy one at the station. Seeding of Cereal Spring grain varieties was completed by the middle of the week and Spring wheat and oats seeding on the D.L.A. plats was finished today. The .21 inch of rain that came the latter part of last week put the top soil in fine shape for this early seeding, and if the season from now on will follow up this lead there is still a chance for something of a small crop of grains. Farmers in this locality however, are not doing much seeding of these crops, but are preparing their ground for the sorghum crops of which there is indication of a large acreage forthcoming.

Messrs. E. Frank Chilcott and John Seiglinger of Woodward were visitors at the station during the week. Final plans were agreed upon for crop and rotations changes to be inaugurated in the Dry Land work here beginning with this season. It was also decided to reseed the Winter wheat plats to Spring wheat, the drouth of the past fall and winter having killed out all winter crops here.

The C.C.plats for Spring and Winter wheat were sampled during the week. Considering the drouthy conditions that have prevailed here the past 6 months the soil for the first 2 feet is remarkably well supplied with moisture.

Climatic record taking was resumed in full as usual beginning with this month. Following is the data on weather since April 1st. Max.temp, 80 on the 1st. Minimum, 28 early this morning. The freeze was long and

Amarillo, report for week ending April 6, cont:

severe enough to damage the fruit buds. Ave. hourly wind 9.4 miles. Evaporation observed 1.257 in. and as calculated by the formula developed by the Biophysical Office, it was 1.215 in. There has been no precipitation during the past week.

Archer, first report of the season:

The winter has been unusually moderate with lack of snow. The month of March has been quite warm. Grass is making a good start, but is in need of moisture. Very little soil blowing has taken place, and as a result, there is a good prospect for winter wheat on the fallow plats. The winter wheat on corn ground will probably have a fair stand if moisture comes soon. There is very little showing of winter rye, or winter wheat on fall plowing and disced in stubble. Although the soil lacks moisture, it is quite mellow and spring plowing will not be difficult.

The weather has been very pleasant except yesterday, when there was a strong north wind and some snow fell. Today it is fair and warm again. The weather records were discontinued last November. Records of temperature, wind and precipitation were resumed March 25th, and the other records will be started April 1st. The evaporation tank was found to have many small holes in the bottom. The leakage last fall caused by the holes was probably very slight as they were opened when the rust was scraped from the rust-pits. The tank was raised and the holes were mended with aluminum rivets. Then the bottom was given two coats of asphalt paint both inside and out. It will be tested for leakage before it is replaced in the ground.

Archer:

Monday was the only day of this week agreeable for outside work; and manure was hauled onto the plats in rotations 68, 71, 72 and 246. Weeds were raked from the spring seeded brome grass plat in rotation 41, and a very good stand was discovered. The brome grass and the alfalfa are making a very good start in spring growth.

Since Monday, it has been snowing or the wind blowing the snow into drifts. There has been about six inches of snow with a precipitation estimated at $3/4$ of an inch. The average hourly wind velocity for the week is 10.9 miles. Maximum temperature, 67 on the 21st, minimum, 12 on the 3d. Means 41 and 26.

Bellefourche:

Temperature and other climatic conditions during the later part of March were favorable for field work. Most of the plowing, discing and harrowing preparatory to seeding were finished before April 1st. Since the first of April, no field work has been done. Snow fell on three days of the week, but the total precipitation was only .27 inch.

Winter conditions in this section were excellent. A few severe storms occurred, but on the whole, the winter was fairly open and the ranches still have considerable reserve feed on hand. An exceptionally large number of

Bellefourche, report for week ending April 6th, cont:

sheep were wintered within the Bellefourche project.

Labor shortage has not been experienced in this section up to the present time and the experiment farm has had no trouble in securing all the help needed.

A large acreage of spring wheat is being sown in this locality. Favorable weather in March permitted early seeding. In some of the sandier soil along the Bellefourche River some seeding was done the first week in March.

Colby, Report for week ending March 30:

The week brought us a very beneficial rain. Over an inch of water fell during a period of about 24 hours and soaked into the ground with practically no run-off. While we were not in need of moisture in the soil the surface had become dry and badly cracked, so that the evaporation was rapid, and high winds would cause the soil to blow considerably. The prospects of a wheat crop are materially improved. Before the rain not over fifty percent of the fields in the country were in first class condition. In many a high percentage of the stand had winter killed, in some, much damage had been done by the wheat false wire worm, while a large number were blowing badly. The spring grains sown the middle of the month are coming up with good stands.

Peas in rotation 154 were sown on the 21st. This week was spent in soil sampling and in attending to the general work of the station. The moisture is down to a depth of two feet on the average.

Weather: - Warm and clear till Thursday, since then rainy and cold. Precipitation, 1.07".

Dickinson:

Wheat seeding was commenced on March 28 and finished during the week. This is the earliest seeding on record for the station.

Fall wheat is practically all winter killed except that sown in grain stubble. Fall rye is better but not quite up to normal. Considerable damage was done last fall by grasshoppers and continued dry weather after the seed germinated reduced the stand of rye in many cases.

Maximum temperature for the week 70, minimum 13. Precipitation for the week, .05 inches. Monthly precipitation for January, February and March, respectively; .61, .39 and .25 inches. Lowest temperature for the winter was -35.

Havre, report for week ending March 30:

The outstanding feature of the past winter in this part of the state has been the large number of "Chinook" periods. In some localities the snow was all taken off, while in others the snow melted into a slush which froze into ice. North of the Milk River nearly the entire area was a sheet of ice by March 1st. From the Milk River south, where the

Havre, report for week ending March 30, cont:

most of the winter wheat is seeded, there has been less ice. Stock as a rule, has wintered well. The extreme cold weather has been in periods of short duration.

There will undoubtedly be some killing of winter wheat. Some of the dates of seeding on the station have killed entirely, while some of them are very good to date. The reports are that all wheat that was drilled in standing stubble, is very good. As a rule that holds true on the station. The largest wheat we have is volunteer, which started in the stubble last fall. Winter rye has not killed to any appreciable extent.

The spring season has opened up earlier than usual. Temperatures since March first have been above normal. Frost at present, is mostly out of the ground. With the large amount of rain last fall and with the heavy snow-fall during the winter the surface is very wet. On the average there is close to 3 feet of moisture in the native sod.

The only field work that has been done on the station to date has been breaking sod and rolling winter wheat. If the present weather conditions continue, we should be able to plow on the plats by the first of the following week.

Hays, report for 2 weeks ending March 30:

The weather during the past two weeks has been mild, or warm and very favorable for spring work as well as for plant growth. Winter wheat has been making considerable growth and generally speaking, looks very good for this time of the year. It is more forward than it has been the past two seasons at this time of the year. The poorest wheat is that seeded in corn stubble, and that sown very late. This wheat did not germinate until late in the winter, and some of it not until about a month ago, and these fields suffered considerable from freezing after the last snow.

1.33 inches of rain, which fell during the past two days, is making the wheat look fine, as well as stimulating the growth of a very heavy stand of weeds everywhere. I never saw a thicker stand of weeds than that to be beheld at this time.

Spring plowing and other seedbed preparation for small grains was commenced the 18th and finished the 19th, and the following day (20th) spring wheat, oats, barley and peas were sown. Brome grass was seeded the 21st. Since that date most of the fall plowed plats and some of the fallowed plats have been cultivated to destroy weeds. Also some disking and listing required in seedbed preparation for kafir has been done. And a packer was used on the wheat plats to break crust and fill the cracks which were opening up in some of the plats, - this was done before the rain mentioned above.

March 22nd and 23rd, buffalo sod was transplanted on a portion of the yard about the field laboratory and the tool shed on the D.L.A. project.

Hays, report for two weeks ending March 30, cont.:

All meteorological instruments have been thoroughly cleaned and set in place for climatic observations.

The fifth annual ROUND UP will be held at the Experiment Station April 10th, - EVERY ONE is invited.

Hettinger:

Snow and cold weather has interfered somewhat with field operations the past week. The Wheat plats have been seeded and the ground is ready for oats and barley. The soil is in good condition on top, but the soil is not moist very deep. Fall plowed plats were in poor shape but worked down well.

Mr. Mahnke has been appointed to assist Supt. Downey with the experimental work. Mr. Ogaard is here getting the work started and will leave for the Mandan Field Station next week.

Max. temp., 53, min., 15, prec., .18".

Lawton;

Crop conditions and prospects in south western Oklahoma during the past winter and spring have been very poor and discouraging. The total precipitation for 1917 amounted to 17.05", which was 14.15" below normal. Precipitation during January and February amounted to only 0.45". This limited supply of moisture during the fall and winter months resulted in a large reduction of winter wheat acreage at seeding time. A large percent of the wheat seeded, has died. Some of the wheat seeded in December has lived through and will furnish a limited supply of pasturage and possibly some grain, with favorable conditions from now on. The production of wheat, especially on the up lands in this part of the state, will be a negligible factor. Wheat on the station has made but little growth during the entire spring and the stands are quite thin on all plats.

M.C.A.; M.C.H.; and Rotation 133B were reseeded to spring wheat on 3/7. A falling aeroplane landed in the rate and date of seeding tests of wheat about the first of March. The machine was pretty thoroughly wrecked and by the time the debris was removed, with large trucks and trailers, the plats had been pretty badly cut up and damaged. Very fortunately the pilot was but slightly injured.

The ground was so dry through January and February that only a very small acreage of oats was seeded and this was largely intended for pasture.

Field work on the farms throughout the county has been very late and slow this spring. Farmers were of the opinion that not much good could be accomplished until the soil had received some moisture. The first rains of any consequence occurred March 28 to 30, when 1.29" fell. This was followed on April 6th by 0.65". These rains put the surface in pretty good shape and field work has progressed rapidly since that time. The larger fields on the station were plowed during the fall and winter. Plowing at this time, of course, left the ground rough and lumpy, but the recent rains have enabled us to prepare excellent seed beds for all crops that are to be planted from now on. During the above mentioned rains, the

Lawton, report for week ending April 6, cont:

loss of water by run-off, was reduced to a minimum on these fields.

Feed of all kinds, and seeds for planting purposes have been very scarce and high, in this corner of the state. On account of the scarcity of kafir corn seed, about 90 bushels were distributed from the station for planting purposes.

Mandan:

Horticulture.

- I. Experimental Arboriculture. The land allotted to the new experimental tree combinations is being prepared for planting. A block of 100 Douglas Spruce has been planted in the species testing blocks.
- II. Pomology. Since February and up to date a large assortment of grafts have been made for an extensive experiment in the study of the relationship between stock and scion. Others have been made for new work in revised systems of Pomology. Some nursery stock has been received and heelin in. The winter-mulch has been removed from about 1000 orchard trees. Plants that have been covered with soil during the winter have been mostly uncovered.
- III. Olericulture. The usual number of hot beds were started about March 15 and the young plants of tomatoes, cabbage, etc., are well along. Since February a large amount of hybridization with tomatoes has been done in the greenhouse and an excellent collection of crossed seeds has been produced. By this method two generations are secured in one year.
- IV. Ornamental Horticulture. The mulching on the grounds has been removed from trees, shrubs and perennials.
- V. Fruit Breeding. During March, a great deal of hybridization was done in the greenhouse with all important fruits and a good number of crossed fruits has resulted. In the early part of March, Mr. L. P. Baird spent about ten days here assisting in the hand pollination work.

Agronomy.

Field work for the season started on the 29th day of March, which is a week or ten days earlier than plow work has started at this station in previous years.

Spring plowing for small grain is completed and the rotations are practically ready to seed. Bad weather for the past week has somewhat delayed field operations. The soil at the present time contains a fair amount of moisture.

The past winter was very dry as very little snow fell. The total precipitation from November 1st to April 1st was .76 of an inch.

Winter rye came through the winter in excellent condition. Winter wheat, in the continuous cropping series, winter killed, as is usual. A small amount has lived on a plot that was listed and furrowed, and the seed planted in the furrows.

Brome grass, alfalfa and other grasses started their spring growth much earlier this year than is usual. One of the wheat grasses, *Agropyron desertorum*, is fit for pasture at the present time. It has produced more

Mandan, report for week ending April 6, cont:

growth than any other of the spring grasses.

Temperatures.

Maximum - - - - - 53

Minimum - - - - - 15

Precipitation in form of rain and snow - .15

Cooperative Grazing Experiment.

The Cooperative Grazing Experiment has not started for the season but it is necessary to take note on some of the early native vegetation.

It is noted that western needle grass and the sedges have started growth. They were producing green shoots as early as the 20th of March. Very little of the other vegetation has started to date.

Arboriculture.

Spring work began on the fields this year, March 25th; discing and harrowing being done on 14 acres of Field P in preparation for planting cuttings and tree seed for shelterbelt distribution next spring. Field O, the conifer transplant of 4½ acres, was also prepared at this time.

The conifer work for Shelterbelt distribution is new this year and will be carried on in Field O. This will consist in seed beds and transplant fields. The seed beds will be 24 in number, 4' x 12' each, arranged in three rows, in which will be grown the seedlings for transplanting that which will eventually be sent to the cooperating farmers. The seedlings will be left in the beds two years, necessitating 3 series of beds, one always being in summer fallow. At the end of 2 years, they will be transplanted to the field and left for 2 years more, when they will be ready for shipment.

Two year stock was received from the Forest Service this spring, and is being planted at this time. They are set out in rows 3 feet apart and 4 inches apart in the rows, On account of the extreme care necessary in planting them, a specially constructed board is used, which plants at a rate of 20 each time. Within the last 3½ days, 26,000 have been planted.

Preparation of Field L, the permanent cutting block that is to be established, will be begun this coming week. Conifer planting will be continued and preparation will be made for shipping this spring's stock to cooperators. Only about 400 farmers are receiving trees this spring.

Tucumcari:

There has been no precipitation in this section of New Mexico worth mentioning, since last August, and the soil is so dry that soil blowing is occurring nearly everywhere. We have made an effort to prevent soil blowing on the station, with partial success. No work will be done on the experimental plats until we receive rain.

Work for the week has consisted of setting out a large variety of ornamental shrubs and forest trees. The shrubs and a few of the more dwarf growing trees were set out in a court formed by the machine shed and two

Tucumcari, report for week ending April 6, cont:

boarded walls for protection from wind. All trees and shrubs were thoroughly watered as soon as set out. Some plowing in the west end of the main plat field was also done. The soil breaks up in large chunks and a plow share cannot be used over a day without sharpening.

Messrs E. Frank Chilcott and John Sieglinger of the Woodward Field Station, visited the station on the third.

Average wind velocity for the week, 8.4 mi. Max.temp, 79, min. 30, Evaporation, 1.512". Precipitation, none. Prevailing wind direction, south west. Condition of the sky, clear.

Woodward, report for the period ending March 16:

Mr. E. F. Chilcott left Woodward on the 9th, en route to Garden City where he had some work to attend to. He may visit several of the other stations before returning. He expects to return about the 18th. Mr. Sieglinger, of the Cereal Office, returned from Washington, on the 4th.

We have had some of the windiest weather the past week that has occurred in several years according to some of the older settlers. For several days the air was so full of sand that we could hardly see over two hundred yards. Before the wind started we had the station well cultivated but even then some of the fields started. The orchard started three times but we got the teams out and stopped it by cultivating before it got much headway. One day we kept the teams going until 7 P.M. in order to get everything stopped. After the laborers quit at 5 P.M., Mr. Sieglinger, Mr. Fletcher and Clemmer took the teams and continued to cultivate until everything was stopped. It was dark before we finished. Everything is again in good shape for another wind.

Most of the spring planting of trees and ornamentals is completed. The work in planting this morning will be finishing of the stock on hand. There are a few small shipments that have not yet arrived, but are expected at an early date. The trellis for the vineyard is well toward completion. There are two more wires to string in on each row then it will be completed. The wire running through the top of the posts is in and stretched.

Wheat is looking good in most places around the country and is growing rapidly. There was some that blew out and it is doubtful whether the worst will recover at all. We had to cultivate the wheat plats on the station to keep them from blowing out on the 19th of Feb.

Max.temp., 71, min. 23, ave hourly wind vel. 11.2 miles, evap., 1.971.

Woodward, report for the period ending March 30:

The fore part of the week was spent in plowing the large fields to avoid too big a rust in plowing during the planting season. The plowing is not yet completed but will be carried over until next week. The soil was in good condition and turned over nicely. The surface was pretty dry to a depth of a few inches, but beyond that there was plenty of moisture. The farmers over the country are reporting that the plowing is being done in good shape.

Wheat was needing rain and had not had any since the first of the month,

Woodward, report for the period ending March 30, cont.:

until yesterday. At the end of the day 1.01 inches of rain had fallen. There was no run-off since the rain fell in a slow easy manner. The wheat seems to have made a jump of several inches already. We have had very little wind all week although at times the wind would come up and blow very hard for from fifteen minutes to a half hour on two different days. Two days the wind averaged 12 miles an hour, for the 24 hour period. It is reported that the rain never reached more than 12 miles to the north of Woodward. Wheat, as a general rule, looks good over the county. There is not as much of it winter killed as was thought, and only a few fields here and there blew out. The farmers never took any steps toward preventing a blowout and it is surprising how well some of the fields held out. Wheat on the M.C.A. is completely gone.

There has been some planting of ornamentals during the week, but most of the time was spent in pruning, Mr. Fletcher having charge of this part of the work. Since the rain he has been setting out some cuttings that were made earlier in the season. A great many grape cuttings were made from the best varieties in the vineyard and some from various selected plants and native fruits which Mr. Fletcher located and marked last fall.

Max. temp. 86, min. 33 (very light frost). Ave. hourly wind ve. 7.8 miles, evap. 1.609, precip. 1.01 in as follows: March 29, 0.60, March 30, 0.41".

Woodward:

The week has been very favorable for field work and crops. The corner joining the old alfalfa field on the south and east, which has heretofore been uncropped, was plowed the latter part of the week and disced with the discs set straight to pack. That night we got a good rain on it, which packed it still more and left it in good shape for planting. This field was seeded to alfalfa on Monday of this week. Some cultivating was done in the vineyard and some of the wind-breaks to prevent blowing. All roadway in the D.L.A. project have been plowed and some of the plowing done on the rotations. The following plats were plowed: 84C, 87C, 89C, M.C.A., 152C. Plats to be planted to corn were put in shape, F & G being listed. Corn was planted on the 4th.

There has been some planting and filling in of trees in the wind-breaks this week. A wind-break was planted along the draw on the east side of the road. This consisted of cottonwood and seedling peach alternated. There has been some pruning done this week in the post tree planting but there still remains at least two days work in pruning.

Prospects for wheat are good around here. The rains we have received this spring have come in just right. Last night we got a good shower amounting to .44 of an inch. The moisture supplt, in general, is the best it has been since 1915. The wheat on the M.C. plats and the rotations is not looking as good as that of the farmers. The wheat that was planted in the fields at an earlier date than the seeding of the plats is looking good and has begun to form the straw. Several examinations have been made up to this time for chinch bugs, but not one has been found. Last

Woodward, report for week ending April 6, cont:

fall they were thick on some of the plats that were in wheat last year. When these plats were disced the chinch bugs came out so thick that the ground looked white with them. The severe winter probably destroyed them. A close watch will be kept at all times for any signs of the chinch bug.

Since the rain of last night, the road on the west side of the station is in good shape for working. It was in pretty bad shape up to this time. The boys are using the grader on it this morning to shape it up and fill in the low places. The front road is being dragged. It has been in good shape since the first rains which came in the latter part of February.

Max.temp, 79, min. 35, ave hourly wind vel. 6.8, evap. 1.112, prec. .44".

APR 20 1916

WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE.

REPORT FOR WEEK ENDING APRIL 13.
(Except where otherwise indicated)

Amarillo:

Cloudy and rather chilly and windy weather has prevailed the greater part of the week. A rainy spell that gave us .27 inch precipitation last Monday morning, and a .19 inch shower this morning, gives us a total of .46 inch rainfall for the week. Max.temp.69 on the 8th, min. 30 on the 7th. Ave hourly wind vel., 11.7 miles. Evap., 1.315 in.

Work of preparing land for row crop planting has been in progress on the station, as well as on surrounding farms. It is reported that in some localities around here, the farmers are seeding spring wheat on land where winter wheat has failed. They figure that more land is available than they can handle in row crops. As it is, the largest acreage of the sorghum crops in the history of the Panhandle is scheduled for this season. The local farmers institute is conducting a lively campaign for these crops and the Agricultural Department of the Santa Fe railroad is boosting Pinto beans, as a result of the improved market condition that now obtains for this article of food.

Wheat and oats put in on the Dry Land plats ten days ago are beginning to emerge, and, as a result of the showers, the prairies are just beginning to look green. This condition is much welcomed by stockmen having a lot of poor and starved looking cattle at large, over the ranges.

Archer:

The weather for the week has been unsettled, with a few light showers which totaled 0.18 inches. The average hourly wind velocity was 6.1 miles. Max.temp., 60 on the 12th; min., 24 on the 8th, means, 56 and 31.

The fields became dry enough to work by Wednesday after the snow of last week. The four green manure rye plats were reseeded with spring rye on that day. Twelve plats for oats, wheat and barley were plowed the latter part of the week. The soil is in very good condition for plowing, except in the corn plats, where it is still very dry.in the stubble rows, which are ridged. Between the rows it is quite moist. The plow turned up large hard clots in the rows, and a rain will be needed to put them into a good seed bed. Grass and winter grain are making a good growth since the snow a week ago. Volunteer grain and weeds are starting in the fields.

Ardmore:

Maximum temperature for the week, 69; minimum, 23; no precipitation. In the preceeding week, from April 2nd to 6th, snowfall amounting to 19 inches was recorded. This storm was general throughout this state, but stock did not suffer greatly in this section, as hay was plentiful.

Season opened two weeks earlier than normal in this section. Field work was started on the station on March 18th, seven days earlier than any previous season in the history of the station. Field work progressed without interruption until April 2nd. Considerable seeding of wheat and oats was done on the station before the storm. Prior to the snow storm, the surface and sub soil was exceedingly dry, but the surface soil is now in

Ardmore, report for week ending April 13, cont:

exceptionally good condition.

The acreage of spring wheat that will be seeded throughout the county will be a third more than normal.

One pure bred cow and two calves of the dairy herd of this station, have recently died from anthrax. No loses have occurred within the last ten days, and it is hoped that the disease is now under control. All cows and calves were given a prophylatic dose of serum alone, which insures a condition of passive immunization for a period of about two weeks. Vaccination, with anthrax, will be made during the coming week.

Mr. J. D. Kelso, General Mechanic of the station staff, is at the Judith Basin station, superintending the construction of a large concrete cistern similar to the one that is in use at Ardmore.

Bellefourche:

The week has been very favorable for field work and seeding in this section is well advanced at the present time. All of the spring wheat on the Dry Land plats have been seeded.

For the first time in years, dry land alfalfa in this section, winter-killed, to some extent. The particular dry fall was, no doubt, responsible for the injury. Alfalfa on irrigated land did not suffer.

Winter grains did not come up last fall, but are now emerging and give promise of a fair stand.

Max.temp. for the week, 76, min., 24. No precipitation.

Big Spring, report for period April 1st to 14th:

All the climatic readings were started on April 1st at this station. Max.temp., (from the 1st to 14th), 88, min., 37, prec., .10 of an inch, evap., 3.22 inches, ave hourly wind vel., 8.0 miles.

The general drouthy conditions prevailing last fall still remain definetley unbroken. The following rainfall report for the past six months will give an idea of the present situation:-

Month	Year	Precipitation
Oct. - - - - -	1917 - - - - -	.00
Nov. - - - - -	1917 - - - - -	.12
Dec. - - - - -	1917 - - - - -	.00
Jan. - - - - -	1918 - - - - -	.60
Feb. - - - - -	1918 - - - - -	.73
Mar. - - - - -	1918 - - - - -	.09

The precipitation received in February enabled us to prepare the spring plowed plats in the rotation series. Also, at the same time, the fall plowed plats were worked down, either with the harrow or the disc. The various fields were relisted to prevent soil-blowing, which has been a constant menace all winter. Last fall, we dry-listed most of the fields of Nos. 2 and 3 to stop the soil from blowing. These first join the rotation plats on the north. Field No. 1 was in sudan grass last season and

Big Spring, rpt. for period April 1 to 14, cont:

gave us the least trouble, but it was necessary to cultivate this field twice to prevent drifting of the soil. Last month this field was listed and had been holding well since. All the sandy land farms to the north and east, have been blowing badly all winter and spring, and very little effort has been put forth to hold the land by listing or cultivating.

We feel proud of the fact that we have been able, to date, to keep the experimental plats from blowing very much this winter and spring.

Winter wheat planted in November did not come up until the February rain. A late investigation shows that the wheat has died out on all plats with the exception of plat C. In February, we planted a block of spring oats and about an acre of rye and emmer. These crops were planted on land fallowed last season, and a very good stand was secured in each case, but the dry weather and drifting soil has eliminated most of the block sown. It became necessary to cultivate at least half of the above block to prevent and stop the trouble.

The local agent for the Moline Universal tractor, gave a demonstration of his machine on the farm Wednesday and Thursday of this week. There was quite a crowd out both days to see this tractor work. Mr. E. F. Chilcott of Woodward visited the station for two days, the fore part of the week.

Colby:

The week has been very windy, the wind averaging over twenty miles per hour almost every day. The cold, which set in at the beginning of the month, continues. Today it has rained and sleeted a bit, but the amount of moisture that fell, was only .04". Winter wheat is stooling well and the spring grains are up with good stands on all the plats. The field peas are just beginning to come. There has been no lack of moisture so far this spring.

Weather:- max.temp., 71, min., 27, prec., .07".

Dalhart:

Since the first of the year, the weather has been rather cooler than usual, but no extremely cold weather has been recorded. All minimum temperatures recorded during January were below freezing, and for the month of February, there were but two days upon which minimum temperatures, of 32 or above, were recorded. The minimum temperature recorded was 11 below on the 11th of January. January and February were very dry with the usual amount of wind movement. The total precipitation for the two months being but .11 inches. During March the total precipitation recorded was 2.85 inches, all but .09 of which fell on and after March 22nd. This is the first time that a rain, of any consequence, has ever been recorded in March. The value of this rain will be very great, as it will reduce the cost of preparing farm land for seeding, and at the same time, insure a stand without any considerable amount of replanting that has been necessary during the dry springs. The earliest rain of any value last year, did not fall until the 5th of May, which made the season very late. The March rains which have

Dalhart, report for week ending April 13, cont.:

occured this year, will, in all probability, advance the season about three weeks. The weather continues cold and the range grass has not greened up to any extent.

Up until it rained on March 22nd, considerable difficulty was experienced in preventing the soil from blowing. The farm has been gone over since the rain and it is not expected that there will be any further soil blowing as the soil is in such excellent condition that it can be easily prevented. The most severe wind and sand storm occurred about March 12th; during the most of the day the wind velocity averaged between 39 and 40 miles per hour. All of the winter wheat and all of the winter rye with the exception of one plot, was destroyed at that time.

Dickinson:

The variety-plats of oats were seeded during the week and preparations were made for finishing all oats seedings the coming week, should the weather remain good.

The continued good weather has permitted farmers, in this part of the state, to put in large acreages of wheat.

Max.temp., 70, min., 20, prec., .34 in.

Garden City:

The past week has been favorable for field work. All fall plowed and fall listed plats were harrowed and spring listing was finished on the seed bed plats.

All winter wheat and winter rye winter killed and the plats have been seeded to spring wheat. Spring sown small grains are growing nicely.

Max.temp., 71, min., 28, ave. hourly wind vel., 8 ft. anemometer 16.9 miles, 2 ft. anemometer 11.0 miles, evap., 1.335"; prec. .18.

Hays:

Max.temp., 71, min., 28, prec., .07. Frost April 10th. First part of the week was part cloudy; the last half cloudy, and begin sprinkling rain about 1. P.M.

Winter wheat is making considerable growth and generally looking good. The best wheat is that seeded on fallow and green manure. The next best is that on early fall plowing. The poorest - and that is very poor - is that on the kafir stubble. The next poorest is that on corn stubble.

A very good stand of spring wheat, oats and barley have been secured on all plats. It is just a little thinner on the spring plowed ground than on other seedbed preparations, but is looking good. The prospects for spring grain crops are much better than average for this time of the year. Canada peas are now up and looking good, also brome grass prospects for a stand is very encouraging at this time. It is up nicely. If it succeeds in "sticking" through the summer, it will be the first time such a thing

Hays, report for week ending April 13th, cont:

has happened for three years when the last good stand was secured.

During the week all fallowed ground which was fall listed, has been cultivated to destroy weeds. Also some cultivation and harrowing was done on the seed bed preparation plats for kafir in Rotations 501 to 507, inc., excepting 505.

Soil moisture determination work was started this week on M.C. Winter wheat plats. Ten ft. determinations were made on 4 of these plats.

The Ft. Hays Experiment Station held it's fifth annual Round-Up on April 10th. There were 2500 people present, according to the counts and estimates. It was the largest attended affair we have had at the Station, unless it was the First Annual Western Farmers Conference in 1910. I am enclosing a copy of brief write-up, which gives names of the speakers who appeared on the program. An automobile tour over the station included a trip through and around the Dry Land project, which, judging from the compliments received, attracted its share of attention. The project, I think, was in fairly good average condition. We had previously marked out a one mile zone through and around the plats. The road was in good condition for cars, and the things of interest, which could be seen from the drive, were indicated or marked by 40 1 x 2 feet sign boards painted white and lettered in black.

Havre:

The first two days of the present were cool. On Monday and Tuesday mornings, the ground was frozen so that the field work could not be started until after noon. The latter part of the week has been warm and field work has progressed rapidly. Spring plowing on the plats was completed the day before yesterday and the ground is now just about ready for seeding. Nearly 70 acres have been seeded in the commercial fields that were ready for seeding.

During the past two weeks the soil has crusted badly. This has been hard in the winter wheat. The stands will, perhaps, be a little better than they were last season, but not as good as they were in 1916. All the winter wheat was gone over with a tandem roller-packer. The plats that were seeded in stubble are the best to date. Some of the varieties in the variety tests have entirely killed. The new wheat, originated by Mr. Burbank, which was sold to some extent over the state, has killed very badly. From present indications, the largest percentage of survival will be from Koffoid, a soft winter variety that has been grown in Idaho for a number of years. This is the third year that this variety has been among the best at this station. There is no winter killing in winter rye.

Max. temp., 77, min., 20, prec., T.

Hettinger:

Weather good, rained .39" today (15th). Seeded oats on plats A.B.C., 14D, 16D, 19D, 15B, 17B, 18B, 31B, 72D, 76D, 32B, 71B, 75B, 12F, 41D, 42D, 11RC, 614A, 615A, 605B on April 8th. Seeded barley on plats

Hettinger, report for week ending April 15, cont:

A.B.C., on April 8th, Seeded sweet clover on plats 32B, 11A, 31B, 41D, 12B and 41F.

Mr. Mahnke took soil samples on plats M.C. wheat old series A.B.C. and D. M.C. wheat new series 581A, 581B, 591A, 582A and A.F.C.D.

Max. temp., 67, min., 39, prec., .39".

Huntley:

Though spring has opened up comparatively early this year, the soil has been too wet to permit extensive field work until the past week. Fall broken sod and disced down and the brome grass and alfalfa pasture plats were harrowed April 1 to 6.

During the last week fall plowing and corn stubble were disced on Field G and spring plowing was begun on the rotations.

Fall wheat and rye survived the winter in good shape and all plats appear to have a very good stand. Because of the dry fall and late germination, the winter grain is not as far advanced as normally; that on summer fallow being the only cultural method on which the plants are tilling.

Alfalfa and sweet clover are making slow growth, but brome grass is 3 to 4 inches high; that in the pasture experiments being nearly ready for grazing.

The meteorological instruments have been moved from the old inclosure near the barnyard to a new location above the canal.

Temperature for the week: max., 76, min., 26, prec., .03 in.

Judith Basin:

Maximum temperature for the week, 70, min. 29, prec., .33 in, evap., .774 in. The precipitation for January was the highest on record for that month, it being more than three times the normal. The precipitation of February was also above normal, while that of March was .31 in. below the average for the last 21 years. The lowest temperature for the winter, 37 degrees below zero, was recorded on the night of January 28th.

Reports of farmers indicate that the winter wheat came through the winter in good shape in this locality. However, considerable winter killing seems to have taken place on the winter wheat variety testing plats at this station. Wheat on the rotations and in the c.c Series, has suffered but little from winter killing. The trees in the shelterbelt also passed through the winter in good shape.

The ten acres which are to be used for experiments with shelterbelt as well as the land which is to be used for cereal variety testing, was disced and harrowed during the week.

Mr. J. D. Kelso, of Ardmore, S. Dak., arrived on the station on April 7th, and has been superintending the construction of a concrete cistern. The walls have been finished and the floor will be laid in a few days.

1914

1915

1916

1917

1918

1919

1920

Lawton:

Cool, weather has prevailed during the past week. The min. temp. for the week was 34 on the night of the 9th, when a slight frost was noticeable. The max. temp. recorded for the week was 74; on the 12th a rainfall of 0.75 was recorded. This rain fell rather gently and materially benefited all growing crops.

Corn was planted on the 9th and is just sprouting at the present time. Sweet clover and alfalfa seeded on the 2nd of April, are coming up very nicely.

All spring plowed plats in the permanent rotations to be seeded to sorghum crops, cow peas and cotton, were plowed and harrowed on the 11th and 12th. The ground is in excellent condition for tillage at the present time.

Mandan:

Horticulture.

Several new species testing blocks were planted and others were filled in.

A big collection of winter grafts were planted into nursery rows. These constitute the stock and scion experiment. The hot beds are doing very well.

Some work has been done on the grounds.

The remainder of the raspberries and other covered fruits, have been uncovered.

Out of 500 Chinese Apricots, 25 have been selected as being of sufficient hardiness to study further.

Bullberries were in bloom April 12th. Also the Chinese elm

There has been less winter injury than the two preceding years.

Agronomy.

The seeding of small grain started the past week.

A modification of the system of staking plats was used here this year with marked success. A 3/16" cable was secured, which was used as a line and markers of adhesive tape were placed along this cable so that each plat was marked. The marks were set in half the width of the drill so that in all cases the driver would line with the tongue of the drill. Two stakes were set out for each plat, that is, one on each side of the plat with the exception of the last series, which had two stakes on each end of the plat.

The type of drill used here is a 6 foot Van Brunt. A similar line could easily be made for any type of drill. However, this method of staking is dependent upon permanent corner stakes for each series and a size of drill, so that seeding of a plat will be finished on the same end from which it started.

Spring wheat in the rotations (72 plats) was seeded on the 10th, and oats (67 plats) was seeded on the 11th. This is the earliest date that seeding of small grain has been done on the station. The ground was in very good condition for seeding but it is very dry on top and is apt to

Mandan, report for week ending April 13, cont:

to blow unless rain comes soon. However, no serious trouble has been experienced to date from blowing on any rotation plats. Some fields on the station have blowed badly during the past week, as the wind has been very high for most of the period.

Seeding of wheat varieties for the Office of Cereal Investigations was completed yesterday and seeding of oats is in progress today. Larger fields of grain have been sown for feed and others are being sown.

Max. temp., 72; min., 19; prec., .02.

Cooperative Grazing Experiment.

Bids for the reconstruction of the well which was sunk in the pasture last year, have been accepted. Work will be started in a short time. It will no doubt, be necessary to go considerably deeper than the present well.

Grass has made a good start the past week and stock are now able to obtain a limited amount of green pasturage.

Arboriculture.

The past week has been spent, for the most part, in the continuance of planting conifer seedlings. Owing to the frozen condition of the ground mornings earlier in the week, we were not able to do much at that time. We have, however, planted 27,500 seedlings. The continued dry weather has caused us to discontinue planting and we have been obliged to hell in the remaining stock, the heavy winds and warm days of the latter part of the week, being very detrimental to planting.

A pipe line is being laid from one of the cottages to the conifer field and the trees will be irrigated until we get a good rain. The water will afterwards be used in growing the conifer seedlings in the seed beds.

A road was graded from the coulee separating Field I, from the other fields, which will enable us to get into this field with the power spray and other heavy loads, when it is necessary.

Shipping stock to cooperators will be begun Monday and should it rain, conifer planting will be continued until finished.

North Platte:

The spring here has been an early one. Frost was out of the ground and field work was begun March 11. It has been possible to keep teams in the field almost continuously since that time. The snowfall during the winter was very light and there has been very little moisture so far this spring. Winter wheat is, however, estimated at 85% for the section. Of the 62 winter wheat plats on the Station, 6 were killed out by soil blowing and have been reseeded with spring wheat. A few others are weak but may make fair stands if moisture comes soon. Spring grain on the

North Platte, report for week ending April 13, cont:

plats was seeded March 20 - 24, and while the surface soil is dry, good stands have been secured. Thistles will be troublesome unless moisture comes soon.

Sheridan:

The last few days in March we were able to get into the field for about $2\frac{1}{2}$ days of plowing and 2 days of discing. We also seeded about 5 acres of oat in a field. At that time prospects were very good for spring, but a heavy snow fall put an end to field work.

The next field work that was done, was yesterday, when the rate and date of seeding plats were staked, and this morning the first dates of seeding of wheat, oats and barley are being seeded. So far, all field work has been done on the north end of the field, which is, by far, the lighter soil. It will be several days before we can do anything on the rotation work, with good weather. Prospects at present are very bright for good weather, as it is now clear and calm.

During the past week grading has been done around some of the buildings, preparatory to seeding the grass this spring. A supply of horse feed has also been ground during the week. During the wet weather since the first of the month, several small jobs of carpenter work have been finished, and a concrete floor put in the tool room of the Implement Shed.

Seed corn is being germinated, and the test is very satisfactory,

Winter wheat and rye, as well as alfalfa and sweet clover, on the station, came through the winter with practically no winter killing, and they are making a very good start this spring. I think that this is thus for all of these crops in this section of the country.

The roads have been worse this spring, than the writer has ever seen them here before.

The weather for the past week has been as follows: max. 71, min. 23, wind vel., 4.9, prec. .57 (all in form of rain).

Tucumcari:

On the 7th and 8th; .97" prec. occurred, which has put the surface 8 or 10 inches of soil in splendid shape for tillage. The rains came down slowly and there was no runoff. The road between the station and town got in bad condition and two days work was put upon it with a road drag getting it smoothed down. Other field work done during the week was the setting out of 145 Chinese Arbor Vitea, 398 one seeded Juniper, and a row each of Laurel Leafed Willows and Cottonwood around the earth reservoir. A new plat field was also staked off for the location of the variety and date work with grain and forage sorghums.

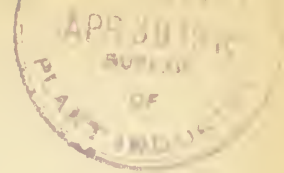
Wind velocity for the week, 8.0 mi. Max. temp., 71; min. temp, 37; evap., 1.171"; prec., .99"; prevailing wind condition, south-west. Condition of sky, cloudy.

Woodward:

The past week has been cool and cloudy. General field work was in progress through the entire week. All the increase fields are plowed at this time. Plowing commenced on the Cereal plats for the rate and date plantings that commence on the 15th. The pruning of the post trees planting was completed this week and the brush gathered together so that the rows can be cultivated with the double shovel. Most of the wind-break was cultivated this week. Soil samples were taken to a depth of six feet on plats A & C of corn and winter wheat.

Reports made by farmers living in the Haskev country and Moscow Flats north of Woodward, and along the South Persimmon were never better for a good crop of wheat. While some sections report much of the crop blown out, an abundant amount of spring crops are being planted or about to be planted. The rains during the past week and the week before, have put the soil in fine condition and there is enough moisture to last for some time without rain. Prospects for another rain are good at the present time. It has been trying to rain all day, but up to this time there has been nothing but a few small showers. There has been a rather strong wind from the south east all day.

Weather report; max.temp., 50; min., 30; ave.hourly wind vel., 3.9; evap., 1.294; prec., T.



WEEKLY STATION REPORTS

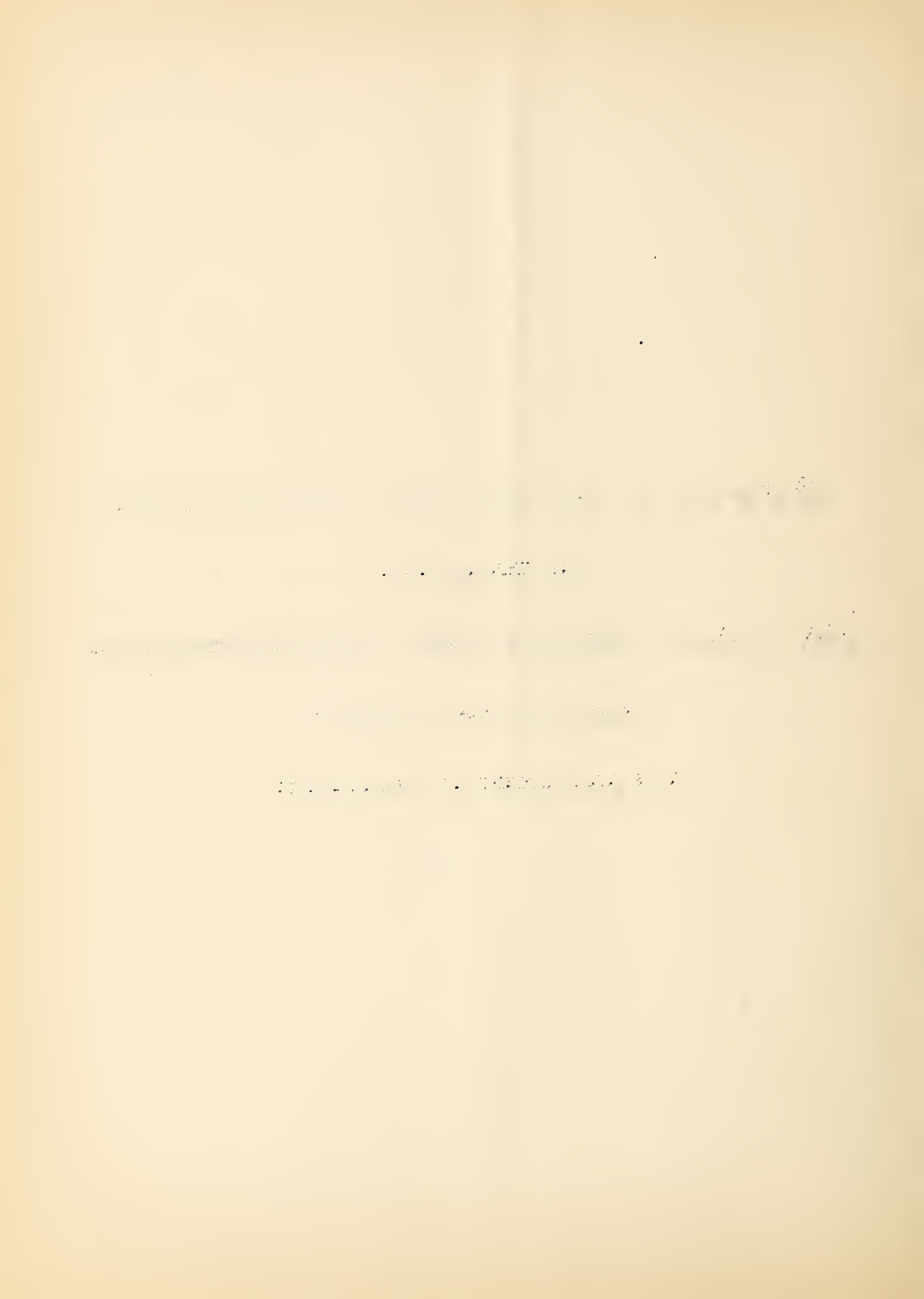
OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE.

APR 20 1918



REPORT FOR WEEK ENDING APRIL 20,
(Except where otherwise indicated)

Akron:

The past week has been cold and windy with some precipitation in the form of snow. No field work was done but some thistles were burned and seed potatoes were sorted.

Winter wheat and rye came through the winter in good condition and has made as much growth as it had last year by the middle of May. Spring grains are up in good shape. Trees came through the winter in good condition and plums are beginning to blossom. Grass is starting slowly but this is due largely to a lack of moisture.

Maximum temperature for the week, 54; minimum, 23; precip., 1.00.

Amarillo:

Weather for the week continues as last, unsettled and prevailingly cold and cloudy, with little precipitation. Maximum temperature was 73° on the 15th and 16th. Minimum, 31° on the 19th. Precipitation, .02 inches. Evaporation observed, 1.551 in. and calculated, 1.764 in. Hourly wind, 12.1 miles.

Work of preparing the land on Dry Land plats for row crops has practically been completed. It is planned, if weather warms up, sometime next week to plant the corn to try out the experiment in early planting of this crop. Spring wheat and oats are all up with fine stands since seeding the first of the month.

Archer:

There has been no field work this week because of the weather conditions. The fields were too wet for tillage the first three days of the week from a 2.3" rain a week ago. The rain was gentle and most of it was taken up by the ground. A four inch snow fell on the 18th and drifted badly. A cold northwest wind has been blowing almost the entire week. Since the fifteenth the ground has been freezing every night.

Mr. V. H. Florell arrived Wednesday and will remain a month to do the spring seeding for the Office of Cereal Investigations.

The maximum temperature for the week was, 56 on the 13th; minimum 18 on the 20th; means, 42 and 27. Average wind velocity, 14.6 miles per hour. Precipitation, 2.7 inches.

Big Springs:

The week has been dry with high winds prevailing most of the period. Maximum temperature, 90; minimum 36; evaporation, 2.40 inches; wind velocity, 10.4 miles; precipitation, 0.

On Thursday, we experienced the worst sandstorm of the season. At 3:00 p.m., when the storm was at its worst, the sun was entirely obscured by the blowing sand and dust, and it became necessary to turn on the lights in the office for a short time, in order to see to work. Some damage was done to buildings in the counties east of us. Conditions con-

Big Springs, Report for week ending April 20, con'd:

tinue to be so bad and the prospects so poor for a crop that a number of the farmers in this county are leaving, or are planning on leaving soon. The severe wind of thursday will make it necessary to cultivate or relist part of the fields to stop the soil from blowing. Our experimental work, including date of planting tests in the variety experiments, will be much delayed this season on account of the dry condition of the soil.

Dalhart:

With the exception of Monday and Tuesday, the weather has been so inclement that it has been impossible to do any field work. There has been a brisk wind, accompanied by occasional snow flurries, and temperatures varying from 29 to 47'. The entire farm has either been disked or cultivated and there has been no blowing. Some plowing has been done and the spring grain seeded.

The rains that fell in March have left the soil in good condition and the farmers are preparing their land as fast as weather conditions will permit. There will be from 25 to 40% increase in the acreage devoted to crops in this section.

Maximum temperature for the week, 79; min., 29; precipitation, .05.

Dickinson:

Rainy weather prevailed during most of the week. A heavy snow, accompanied by high winds, occurred on the 17th. Total precipitation for the week, 1.61 inches; total for the month to date, 2.04 inches. Wind velocity, on which most of this precipitation occurred, nearly 17 miles per hour, for 48 hours. Mean temperature for the week, 35', max., 48' and min., 27'.

Practically all of the wheat was in the ground before the storm started. Very little field work was possible during the week.

Some damage to pine trees was noted immediately following the snow on the 17th. Many branches were broken off and a few trees were broken off about half way to the top. Several telephones were put out of commission in the city limits of Dickinson.

Garden City:

Most of the week has been cold, cloudy and damp. A maximum temperature of 43 degrees, accompanied by considerable wind movement, prevailed on three successive days.

With the exception of discing plats to be summer tilled, to kill the heavy growth of Russian thistle, no field work was done.

Mr. O. J. Grace visited the station on the 17th.

Maximum temperature for the week, 64; minimum, 30; wind velocity on 8' anemometer, 16.4 miles, on 2', 11.9 miles; evaporation, .933" and precipitation, .44".

Havre:

The weather during the past week has been windy with cool nights. The past four days, the minimum has been below freezing, but not enough so as to interfere with field work. A shower of .15" fell last Sunday.

The spring grains on the plats were all seeded during the week. Altho the surface soil has crusted more than usual, this spring, the seed bed is very good. The seed has been seeded deep, but with the recent winds, the surface is drying rapidly and the germination will be un-uniform, unless rains fall soon.

Some of the spring wheat in the locality is now thru the ground and a great portion of the winter wheat seeded on fallow has been seeded to spring wheat. The most of the winter wheat seeded in stubble, has survived and is starting growth.

Hays:

Maximum temperature, 58; minimum, 32; total precipitation, 1.45 in.

The weather has been generally cloudy and cool, with rains on the 14th, 15th and 20th. Very good growing weather for all the small grains.

The ground has been too wet most of the week for any field work, except a part of a few days.

Huntley:

Occasional snow flurries and showers throughout the week delayed field work somewhat, though good progress was made. All plowing, discing and harrowing for small grain was completed and the seeding of spring wheat on the rotations will be finished today.

Temperature for the week; max., 73; min., 18; precip., .21 in.

Lawton:

Unusually cool weather has prevailed during the past week. At the present time, serious danger of heavy frosts seems to be past, for a while, at least.

Corn planted on the 9th, of April, has not yet emerged but a few days of warm weather ought to bring it thru rapidly.

The following crops in the cooperative tests were planted on the 19th, of April; Cotton, cowpeas, kafir, milo, sumac, and red amber. This planting represents the first in a series of date tests.

The presence of a fair supply of moisture in the first two feet of soil, has greatly encouraged the farmers in this part of the country. Field operations have progressed rapidly and much planting will be done from now on.

The following amounts of precipitation have been recorded in April to date: April 5th, 0.02; 6th, 0.63; 13th, 0.75; 14th, 0.12; 15th, 0.73; 17th, 0.09; 19th, 0.02. Total, 2.36. Normal, 2.95. The total precipitation for March was 2.16. The normal for this month is 1.62.

Max.temp., 74, min., 39.

Mandan:

Horticulture.

Most of the new shelterbelt combinations were planted.

Miscellaneous seeds were planted.

Outside grafting was done.

Cultivation of all permanent plantings is well under way.

Vegetable work in hot beds and green-house is making excellent progress.

Some work was done on the grounds. Soil moisture work on horticultural plantings was started on the 19th.

Agronomy.

A total precipitation of 1.64 inches of rain fell the past week. It started raining on Monday and Friday was the first day that we could do any field work.

Advantage was taken of the wet condition of the ground to seed down several areas that are subject to blowing, to a mixture of oats, bromo grass and alfalfa.

Some seeding has been done as follows:

Alfalfa, sweet clover and peas in the rotations. Some peas and oats mixture and rape for the Office of Drought Resistant Plants and also some sweet clover for the same office.

The seed blocks of wheat, oats and barley have been seeded. They are for pure seed for the rotations another year. The seed in these blocks were treated for smut. The hot water treatment was given to the wheat and barley as there was a trace of loose smut in each of these grains.

The soil moisture determinations are now being made in the continuous cropping plats of wheat. The samples show that the rainfall of the past week went down to about two feet. Below this depth the soil is very dry.

Max. temp., 73; min., 31; prec., 1.64 in. on four days.

Cooperative Grazing Experiment.

The rainfall for the past week has really benefitted the growing grasses. The native grasses are now far enough advanced so that they furnish excellent pasture for stock. They are farther advanced now than they usually are at this time of the year.

Arboriculture.

Owing to the rain the first four days of the week, but very little planting could be done, only 14,000 conifers being put in. This next week should see all conifers planted.

Shipping has not begun as yet, on account of the packing paper, which was due to arrive April 10th, not being received. This has greatly hindered our plans and has proven detrimental to the stock that is sent out. The shipment of Chinese Elms coming from the Office of Foreign

Mandan, report for week ending April 20, con'd:

Seed and Plant Introduction has arrived and is also waiting for shipment.

Planting of the stock for the permanent cutting block in Field L began today and will be continued till finished.

Mr. Ogaard arrived Tuesday to assist us. Considerable office work in connection with the summer's inspection was gotten out of the way during the rainy days.

North Platte:

The dry period which has prevailed during the spring was ended by rains on the 14th, 15th and 16th, which totaled 1.4 inches. These rains fell slowly and there was very little loss by run-off. Cloudy weather, with high winds and low temperatures, has prevailed since the rain. Spring grains have been frosted on the tips of the leaves.

The first soil samples of the season were taken during the week. Moisture from the recent rains has penetrated 2 to 4 inches into the second foot. Below this the soils are very dry.

Sheridan:

The past week has been unfavorable for field work, although some breaking has been done. There was precipitation on every day of the week, part in the form of snow and part as rain. The first dates of seeding wheat, oats and barley was done on the 13th, but since then we have not gotten in the field with the seeder. All of the plats for the Cereal field are staked and ready for seeding.

The rotation is absolutely soaked, and nothing has been done on it except hauling manure onto the manured plats.

It has now cleared off and there is not a cloud in sight, so prospects of spring are very bright.

500 conifers were planted on the 18th, and the ground was in very good condition to receive them. It snowed on them the following days, so we expect them to make a good catch, unless some harm came to them in shipping.

The weather for the past week has been; Max., 69; min., 19; Ave. wind vel., 9.4 miles; prec., 1.17 inches. On the 18th, the highest ave. wind vel. that has occurred since this station was started was recorded, 22.3 miles.

Tucumcari:

The weather for the past week has been very cool for this time of the year. On two nights there was a killing frost, and it is probable that most of the fruit has been killed. The soil is in good condition for plowing and the teams were kept busy in the field most of the week. Most of the early plowing has been done in the old plat field, and one series of 26 plats was plowed in the new plat field. In addition to the

Tucumcari, report for week ending April 20, con'd:

above, the grass was scalped off the circle in front of the buildings, about 3 acres of cultivated land was cleared of yucca and the tinting of the walls in the superintendent's cottage was practically completed. One plat each of red amber sorgho, dwarf milo, and dwarf B.H.W. kafir were seeded on the 16th, in the date of seeding work, with sorghums. Winter wheat is just coming up with a pretty good stand appearing on some of the plats.

Max.temp. for week, 76; min., 30; ave.wind vel. 10.9 miles; evap., 1.986". Precip., 0.15"; 0.11 inches of this amount occurred on the 18th, in the form of snow. Prevailing wind direction, northeast. Condition of sky, partly cloudy.

Woodward:

The week in general has been cold and stormy. There has been very little field work done. On the 16th, the first planting of the rote and date work of the Cereal outline was made. The roads were dragged on the same date. On the 17th, we got some plowing done and some cultivation done on the D.L.A. plats, to kill the heavy growth of small weeds. It has been misting and raining ever since that date so that no field work could be done. The corn that was planted on the 4th of the month is not up as yet and it may be some of it will have to be replanted. Alfalfa that was planted on April 1, seems to be coming through in fair shape.

Weather report: We have received rains as follows; on Sunday (14) we got 1.15 in. which fell in a slow quiet rain lasting all day, April 17th, T., 18th, .14", 19th, .35" and 20th, .07". Total rainfall for the week, 1.71 inches. Max.temp., 71; min., 35; ave.hourly wind vel., 9.4 miles, evap., 0.894 inches.

Williston:

The season opened from three to four weeks earlier than usual in this locality, and considerable field work was done as early as the last half of March. Work in the fields began on the station on March 20th, and has progressed with little interruption since.

Wheat and oats were seeded in the dry land rotations on the 10th and 11th, and the barley was put in the next day. All the other rotations were seeded at the same time, and cereal variety seeding followed.

The soil was dry and worked up somewhat hard; however, in the four days just past, we have had a total of 2.4 inches of rainfall which has fully taken care of present needs, and gives fair prospects of a start for the crop.

Wheat acreage in this section will be increased this year, but the minor crops will probably show a slight decrease in acreage. This is due to shortage of seed and feed, the latter further causing many to disc in the crop, not having the feed necessary to plow.

Williston, repost for week ending April 20, con'd:

Mr. F. R. Babcock, who has had charge of the Office of Cereal Investigations on the station since its establishment, resigned in the fall to take up County Agent work in Divide County to the north.



WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE.

APRIL 27

REPORT FOR WEEK ENDING APRIL 27,
(Except where otherwise indicated).

Akron:

The past week has been unfavorable for field work. The weather has been cool and cloudy, with snow Wednesday and Friday night. Small grain and grass is growing slowly.

The week was spent in sorting potatoes, burning thistles, putting up a flag pole, etc.

Maximum temperature for the week, 70; minimum, 25, prec., 0.84".

Amarillo:

Weather continues unsettled and, on the whole, unfavorable for crop growth. Clear and warm days alternate with cold and cloudy days, about the only steady features being high winds and lack of precipitation. Maximum temperature for the week was 86 on the 26th; minimum was 29 on the 20th, giving us something of a freeze but which apparently did little damage to vegetation. Hourly wind averaged 9 miles. Prec. none. Evaporation, 1.736 in.

All plats on the Dry Land field not now in crop or in stubble, were harrowed the fore part of the week. Weeds are unusually slow putting in their appearance this Spring, and grass over the praires is very slowly assuming the verdant color. In driving around over the surrounding country, one observes some considerable patches of sod being broken for row cropping.

The second round of soil samples, in the Winter and Spring wheat plats, was taken during the week. Seed corn was treated with a Carbolineum preparation, to ward off squirrels, and the seed is also being tested for germination. Planting the corn will be deferred until more favorable weather sets in. The Early Red variety of cowpeas have been decided upon for use on the D.L.A. plat work: this variety from experiments by the Forage Office here, having proved the best all-around producer of both forage and grain.

A Mr. Sommers of the Office of Farm Management was a visitor at the Station on the 25th. He is making a study of the Grain Sorghums thruout this section.

Archer:

The fields have been too wet for work the entire week, as it has been raining or snowing every day. It has been cold most of the week; and grass alfalfa and winter grain have made no growth. Spring rye seeded on the tenth has not come up yet, although the seed was found to have germinated more than a week ago. Poisoned cats were put out for ground squirrels, Thursday morning, and a great many dead ones were found later.

The maximum temperature was 59, on the 25th; minimum, 14, on the 24th; means, 46 and 24. Average hourly wind velocity, 10.4 mi. Precipitation, 0.67 inches. The evaporation records of the month have been very unsatisfactory, because of snow blowing into the tank several times.

Mr. A. E. Kiene, of Hays, Kansas, was a visitor on the 26th.

Ardmore:

Maximum temperature for the week, 71; minimum, 18; total precipitation, .63 inch. The total precipitation for the month to the present date has been 3.01 inches. Practically all of the precipitation has been in the form of snow. Nineteen inches of snow was recorded in one storm during the month. The five year normal precipitation at this station for April, is 2.67 inches. It will be noted that the precipitation this month is only in excess of the five year normal, but that the month has been unusually wet, disagreeable and cold. Precipitation has been recorded on 18 out of 27 days in the month, and it has been impossible to work in the field for more than three full days out of the month, although an attempt has been made to work a part of six different days. Snow has been falling all of today, and it will not be possible to get in the fields for several days.

This unusual climatic condition has resulted in the work of the station being much behind normal for this season. Planting of some fields of wheat and oats probably will be given up due to the lateness of the season. Fortunately most of the farms in this section had completed seeding of spring grain during the month of March.

Bellefourche:

The precipitation for the past two weeks has amounted to 2.11 inches. Most of it fell in the form of snow. As a result field work could not be attended to during that time.

The winter wheat has now come up and all of the plots have a fairly good stand. None of the spring sown crops have emerged.

Plowing for corn has been about half completed.

Maximum, 72; minimum, 22, precipitation, 2.11.

Big Springs:

Maximum temperature for the period, 93; minimum, 39, wind velocity, 9.1 miles; evaporation, 2.45 inches; precipitation, none. The week has been dry and a period of relatively high wind movement. Conditions still remain dry and we are waiting for that big rain so we can go "over the top" and commence our experimental work in earnest. Most of the week has been spent in relisting and cultivating parts of the different fields to stop and prevent blowing.

Colby:

This has been another cold week. Temperatures below freezing were reported five of the last seven nights. Snow covered the ground three mornings of the week. The frosts did no injury to speak of. The cool, cloudy weather has improved the condition of winter wheat very much. The corn was plowed and disced and harrowed this week, preparatory to planting as soon as the ground warms up sufficiently.

Mr. Bayles, formerly agriculturist for the Frisco R.R., in southeastern Kansas, came Monday to take charge of the station. Prof. L.E. Call, of

Colby, report for week ending April 27, con'd:

Manhattan spent Monday here also. Mr. Grace visited the station on the nineteenth.

Weather for the past week; Maximum temperature, 73; minimum, 26; average hourly wind velocity (2') 8.1 mi., (8') 11.4 mi.; evap., .603"; precipitation, .22".

Dalhart:

There has been some growth of native vegetation during the past week and the range has started to green up but has made but very little growth. Some of the earlier varieties of weeds have made their appearance, but on account of the cool weather which has prevailed, all plant growth has been very slow. Only a few of the trees have started budding. Practically all of the spring plowing for the rotations and for the grain and forage sorghum work has been completed.

Congressman Marvin Jones of Amarillo was a visitor at the Station for about three hours Thursday morning.

Maximum temperature for the week, 88; min., 29; ave. wind vel., 8.8 miles per hour. Total evaporation, 1.587 inches.

Garden City:

Most of the past week has been cold and cloudy, frost occurring on three different nights. We have had but little good crop weather and very little planting has been done, either on the station or in the surrounding county. The farmers say that this is an unusually late spring for this section of the country.

The experimental plats of potatoes were planted on the 8th.

Spring plowing will be done during the next ten days, if weather permits, and planting will follow soon after. Spring sown small grains, especially wheat and barley, continue to make a fair growth.

Max., 75; min., 28; wind vel., (8' anemometer) 15.0 miles; (2' anemometer) 10.8 miles; evaporation, 1.259"; precipitation, .13"

Judith Basin, (report for week ending April 20):

Cold and cloudy weather has prevailed during the past week, but no precipitation was recorded. Maximum temperature for week, 63; minimum, 23; no precipitation, evaporation, 1.161 in.

Field work is progressing and the greater part of the plowing on the rotations is completed. The series of plats used for variety testing of cereals, were seeded to different varieties of wheat, oats, barley, and flax on the 19th and 20th.

Alfalfa and brome grass have started to grow, but growth has been slow as yet, due to the cool and cloudy weather.

Havre:

Field work was interrupted the past week by rain and snow amounting to .29", which fell on the 25th. Even tho the amount of precipitation was

Havre, report for week ending April 27, con'd:

small, its effect will be beneficial. The surface was moist for nearly 48 hours. This started germination of small grain that was seeded in dry soil. It also softened the surface crust that formed after the snow melted and which has been detrimental to the small winter wheat. Some of the barley plants are thru the ground and uniform stands should be obtained on all plats.

All soft winter wheat varieties and all Kharkov seeded after October 15th have entirely winter killed. The most uniform stands of Kharkov have been obtained from seeding on October 1st and 15th, altho the stands on earlier seedings are fair. Grimm alfalfa, planted in hills, has killed rather severely in small places, while in solid rows or in drilled plats there has been no killing.

A few of the trees that were left from the shelter belt planting last season, consisting of boxelder, green ash, elm and birch, were planted in a sheltered place in the bottom where they were irrigated twice before August first. These trees that were irrigated have killed to the ground, while the trees in the regular shelter belt on the bench land, have survived the winter with practically 100 per cent.

Hays:

During the week rainy weather prevented any field work worth mentioning. It has been cloudy and cool all week with low temperatures at night, but no frost, even though freezing temperatures were recorded. Maximum temperature, 65; minimum, 32; precipitation, (total of three rains) .83 in.

All small grains continue making good growth.

During the week soil moisture determinations were made on a few plats, some new blind stakes were set, a few plats trimmed, some stakes made and planted, and some soil samples pulverized and packed for shipping.

April 26th the Experiment Station employees in a body took part in a big patriotic parade in the City of Hays. There were 2500 or 3000 people in the parade, and 2000 of the people attended a patriotic program following the parade.

Hettinger, (report for week ending April 20):

Not much work done on the field the past week. The rainy period the last week put the soil in excellent condition, and the outlook is very good for the germination of small grains.

Mr. Mahnke will finish taking soil samples on the Dry Land plats this week.

Max. for week, 52; min., 33; prec., 1.11".

Hettinger:

Weather very favorable for small grains. The cool weather with plenty of moisture, has given the grain a good root system. All the wheat plats are up so one can see the rows. The varieties are up also.

Hettinger, report for week ending April 27, con'd:

Mr. Mahnke took soil samples on Methods of fallow wheat and methods of plowing wheat the past week. The wet weather of the previous week prevented taking the samples sooner.

We expect to start plowing for corn the coming week, on the Dry Land plats.

The farmers in this vicinity took every precaution to kill all grasshopper eggs, by disking and plowing the infested fields.

Max. for week, 47; min., 27; prec., .01.

Huntley:

All seeding of small grains and grasses was completed early in the week on the rotation and pasture fields. The soil was in good condition for working and an excellent seed bed was prepared on all cultural methods.

Early sown spring crops are beginning to emerge in the community and winter crops have made considerable growth. Late sown winter wheat and rye are just beginning to tiller.

Fencing of sweet clover hog pastures on field G is now in progress.

A heavy snowstorm on Friday put a temporary stop to all field operations.

Temperatures for the week: max., 70; min., 18; prec., .21in.

Mandan:

A number of additional species were planted in the species testing blocks of trees. These blocks consist of 100 trees each and the trees were spaced 4 by 4 feet.

About two thirds of all arboricultural experimental plats have been cultivated.

All vacant places in the 1916 and 1917 combinations and species blocks have been filled in with new trees.

Two rows of Jack Pines, 2-2 transplants, have been planted south of the orchard to prevent sand from drifting into the orchard from the south. These fields have been blown very badly. These Pines were grown from seed here on the station and were excellent stock. The planting took about 800 trees.

A collection of strawberries from the Minnesota Fruit Breeding Farm were set out. Early vegetables were planted in the variety trails and in vegetable manuring trails. Additional hot beds were started.

Additional work was done on the grounds, such as spading, leveling, raking and seeding grass seed.

A large number of trees and shrubs in the 3 and 4 year old nursery were dug for planting on the grounds and for shipment.

About 50 trees of the Chinese Apricots in the seedling testing blocks are in bloom.

One day was spent in crown and top grafting of apples, pears, Juneberries and plums. The crossed cherries and Juneberries in the greenhouse are beginning to ripen.

Mandan, report for week ending April 27, con'd:

The first set of soil moisture samplings on the Horticultural plats was begun April 19 and is now well along. The larger part of all horticultural fields have been cultivated.

Agronomy.

Soil sampling has continued during the week and practically finishes the first round of samples.

Two acres of wheat grass (*Agropyron desertorum*) has been planted for seed production. This grass has given very good results at the station to date. It is a bunch grass which was imported some years ago. One acre of a Brome Grass selection was also planted for seed production.

Barley in the rotations was seeded during the week and also the barley varieties for the Office of Cereal Investigations. One acre of a selection of Baltic Alfalfa was seeded for the Office of Alkali and Drought Resistant Plant Investigations.

Wheat and oats which were seeded on the 10th and 11th, are now up with a good stand. The past week has been rather cold so that growth has not been rapid. It is snowing here today.

About 1000 ears of corn have been tested and the germination is exceptionally high.

Mr. J. M. Hammerly of the Office of Corn Investigations is here today, to look after an early planting of corn.

Max. temp., 71; min., 21; prec., (rain and snow), .09 in.

Cooperative Grazing Experiment.

Mr. W. H. Peters, Animal Husbandman of the North Dakota Experiment Station, has been in Montana the past week, looking for cattle suitable for the grazing experiment at this point. The cattle should be here the fore part of the week so that work will start the first of the month.

Arboriculture.

Shipping stock to cooperators has been carried on this week and will be finished Monday. The total number of farmers receiving trees this spring is about 490. These are mostly farmers who are finishing their previous shelterbelts and those who have requested replacements. Very few new cooperators received trees this year owing to the shortage of stock due to last summer's drouth. The total number of trees shipped will be close to 200,000.

Conifer planting will be finished Monday, except for some to be transplanted from our own seedbeds later. There have been over 31,000 plants set out this week during the parts of days on which it could be done.

Beginning Tuesday, planting will start of cuttings, and tree seed for for the stock to be shipped out in the spring of 1919 and 1920, ash and maple being left in two years before shipping. Approximately 300,000 cuttings will be set out in about 3 acres of ground.

North Platte:

The past week has been cloudy and cold. About four inches of snow has fallen in two storms. Light rains have occurred on several days. The amount of precipitation has not been great but it has fallen in such a way as to be of maximum benefit. Crops have made very little growth on account of low temperatures. But two days of field work have been accomplished.

Seeding of spring grains is still going on in the neighborhood.
Max. temp., 68; min., 29; prec., .50 in.

Sheridan:

About $3\frac{1}{2}$ days of field work was done during the week, but a snow storm has now put an end to it, for a day or so. Some breaking was done, the forage field worked down preparatory to seeding, and is now ready for staking. All of the Cereal varieties of wheat, oats and barley, as well as the rates of seeding, and dates of seeding, to date have been planted. The above mentioned work was done, on more or less sandy soil. Nothing could be done on the heavier portions of the field, this taking in the whole rotation field; as there was danger of puddling the soil. An attempt will be made within a day or so, to begin plowing and discing on the rotations.

No really drying weather has occurred this spring, and every few days there was added precipitation, making field work out of the question. While there has not been a very large amount of precipitation, it has delayed out work badly.

Replacements for the shelterbelt were received yesterday, and being planted today. The soil is in fine condition to receive them.

A concrete base was put in for the engine which is to run the feed grinder. This base will be a portion of the floor of the Implement Shed.

The weather for the past week has been as follows: max., 70; min., 15; wind vel., 5.4 mi; prec., .48 in.

Tucumcari:

The weather during the past week has been warmer and more favorable for plant growth than any we have had previously this season. The alfalfa plats on the experimental field are getting green, and grass on the range is starting growth in good shape. Field work with teams consisted principally of plowing, and other field work was of a routine nature.

The maintenance feeding test with range cows was concluded on the 22d. This feeding experiment was done in cooperation with the New Mexico State Experiment Station. The object of the experiment was to determine the cost of feeding range cows two different rations which would not cause heavy gains, but yet would keep the cows in fair condition to produce vigorous calves in the spring, and to afford those calves plenty of nourishment. There were five cows in each lot. Lot 1 was fed a daily ration of 15# of cowpea hay and 75# of sudan grass hay; and lot 2 was fed a daily ration of 175# kafir silage and 20# of sudan grass hay. Owing to the very poor con-

Tucumcari, report for week ending April 27, con'd:

dition of the cows at the beginning of the experiment they made an average gain of 140 lb. per head, for the 84 days fed. The following prices per ton were used for the feeds in the rations: kafir silage, \$6.00; sudan grass hay, \$20.00; and cowpea hay, \$25.00. On this basis the actual feed cost for Lot 1 was \$78.45 and for Lot 2, \$64.04. The lot gains were about equal, but one cow in Lot 2 proved a very poor feeder.

Prof. Foster, of the New Mexico State College, visited the Station on the 23rd; to inspect the cows used in the maintenance test, and to talk over other cooperative work.

Maximum temperature for the week; 84; min., 30; ave. hourly wind vel.; 6.9 mi.; evap., 2.013"; prec., none; Character of sky, clear; Prevailing wind direction, S.W. & N.E.

Williston:

There has been lack of growing weather since the shower of the previous week, and frosts heavy enough to delay field work till noon, occurred on two mornings. High winds are drying up the soil very much, and in light places there is soil blowing. None of the rotation crops has emerged. The rye plats in the green manure series are doing well.

Seeding is progressing rapidly in the locality, and the present good prospects of crops have very noticeably removed the pessimistic and depressed feeling so noticeable in this section since last fall.

Woodward:

This has been another cold and disagreeable week altho the work has not been delayed on account of the weather. The teams were busy all day Monday working on the roads, getting them in shape after the rains of last week. They were too wet to drag last Saturday. The rest of the week the work has been quite variable. We have done some plowing, harrowing, planting, cultivating and mowing. On the 25th the first date of the rate and date cotton was planted. Three rates were planted as follows: two rows at 16, 24 and 32 pounds per acre in each of three plats, making six rows to each plat. Acala cotton was used in this planting. The ground was prepared for and the corn planted on two plats, of the new two-year rotations. The cultivation was confined to the orchard and the vineyard. The volunteer rye in the alfalfa field was cut with the mower. It was beginning to head. the rye on the check-plats is about knee-high and will be heading within another week. The wheat is not so far advanced altho it is growing rapidly. The work on the permanent hubstakes was taken up Monday and the work completed this morning. There were several delays or the work would have been completed sooner. The stakes were set in solid concrete. The center pin is of $\frac{3}{4}$ inch gas pipe and the length of the concrete block is from twelve to fourteen inches, diameter from six to eight inches. Each stake is set about six inches below the surface so as not to be disturbed when the roads are plowed. The corn on the H.C. Plats is up but it is slightly yellow, due to the cool weather since planting. Soil samples

Woodward, report for week ending April 27, con'd:

were taken on the corn and winter wheat plats today, to a depth of six feet.

Weather report for the week: max. temp., 78; min., 33; ave. mean temp., 53; ave. hourly wind velocity, 8.1; evaporation, 1.079 in.

